

IN THE SPECIFICATION:

Paragraph beginning at page 1, line 6 has been amended as follows:

The present invention relates to an electric junction box, in which an internal circuit is constructed by using a metal wire rod having a quadrangular ~~in its~~ cross section, and a process for producing the electric junction box.

Paragraph beginning at page 2, line 19 has been amended as follows:

However, in the conventional electric junction box described above, ~~[[since]]~~ because the busbar should be punching-molded into various bent shapes in accordance with respective forms of the circuit, the mold for the molding must be renewed whenever the form of the circuit is changed, causing an increase in cost. Further, the busbar having a shape wider than that of a wire makes the circuit density limited, causing an increase in weight and size of the busbar wiring board and a case which receives the busbar wiring boards. Furthermore, although the busbar is capable of conducting a large current, the busbar is not suitable for a small current such as a signal current, in a case of which an insulator-coated electric wire having a small diameter is required, causing many man-hours for connecting a terminal to a wire by pressure-welding or welding.

Paragraph beginning at page 3, line 13 has been amended as follows:

In order to attain the above objective, the present invention ~~is to provide~~ provides an electric junction box comprising:

an insulating board; and

a plurality of electrically conductive metal wire rods each having a square or nearly square shape in cross section, which are arranged on the insulating board,

wherein an end of the metal wire ~~[[rod]]~~ rods extends curvedly or straight forming a terminal part and at least a portion of the terminal part protrudes toward a housing of a body of the electric junction box.

Paragraph beginning at page 3, line 22 has been amended as follows:

With the construction described above, ~~[[since]]~~ because the width of the metal wire rod is ~~smaller~~ less than that of a conventional busbar, a circuit of the metal wire rod can be arranged on the insulating board with high density and the structure of the circuit can be lightweight and compact provided that the number of the circuits is the same as that in a busbar. Further, ~~[[since]]~~ because the end of the metal wire rod is extended curvedly or straight, the terminal part can be easily formed. Furthermore, ~~[[since]]~~ because the terminal part is protruded in the housing, a connector for connecting to a mating connector and a mount (connecting part) for a relay or fuse can be formed.

Paragraph beginning at page 4, line 6 has been amended as follows:

With the construction described above, the electric junction box can be easily securely mounted in a narrow space for mounting in a motor vehicle, for example. Further, ~~[[since]]~~ because there is no need to use a mold for molding a terminal part standing up at the middle portion in the longitudinal direction of a busbar in case of the conventional busbar, the cost of the mold can be eliminated.

Paragraph beginning at page 6, line 8 has been amended as follows:

With the construction described above, ~~[[since]]~~ because the diameter of the metal wire rod is small, the circuit density can be increased and the structure can be compacted. Further, a small current such as a signal current can be supplied or grounded.

Paragraph beginning at page 6, line 12 has been amended as follows:

In order to attain the above objective, the present invention ~~is to provide~~ provides a process for producing an electric junction box comprising the steps of:

extending curvedly or straight an end of a plurality of electrically conductive metal wire rods having square or nearly square shape in cross section, thereby forming a terminal part;

arranging a plurality of the metal wire rods on an insulating board; and

protruding at least a portion of the terminal part toward a housing of a body of the electric junction box.

Paragraph beginning at page 6, line 22 has been amended as follows:

With the construction described above, ~~[[since]]~~ because the width of the metal wire rod is ~~smaller~~ less than that of a conventional busbar, a circuit of the metal wire rod can be arranged on the insulating board with high density and the structure of the circuit can be lightweight and compact provided that the number of the circuits is the same as that in a busbar. Further, ~~[[since]]~~ because the end of the metal wire rod is extended curvedly or straight, the terminal part can be easily formed. Furthermore, ~~[[since]]~~ because the terminal part is protruded in the housing, a connector for connecting to a mating connector and a mount (connecting part) for a relay or fuse can be formed.

Paragraph beginning at page 7, line 6 has been amended as follows:

With the construction described above, the electric junction box can be easily securely mounted in a narrow space for mounting in a motor vehicle, for example. Further, ~~[[since]]~~ because there is no need to use a mold for molding a terminal part standing up at the middle portion in the longitudinal direction of a busbar in case of the conventional busbar, the cost of the mold can be eliminated.

Paragraph beginning at page 9, line 18 has been amended as follows:

The automatic gearing module 1 includes in turn from the top: a cover 2 made of synthetic resin; a plurality of solenoid valves 3; a component such as an electronic component

(ROM, i.e., memory unit) 4, oil temperature sensor 5 and rotation sensor 6; a plurality of electrically conductive metal wire rods 7, each having a quadrilateral shape (square or nearly square shape) in cross section; terminals 8 and 9 for connecting the solenoid valve; a base 10 made of insulating resin; a plate 11 made of insulating resin; a plurality of oil pressure switches (components) 12; and a control valve assembly 13.

Paragraph beginning at page 10, line 12 has been amended as follows:

The terminals 8 and 9 are bent into a L-shape by a conductive metal plate and have perpendicular electric contacts 8a and 9a protruding upward and horizontal connection parts 8b and 9b, which are fixed to the a surface of a horizontal insulating plate 18 of the base 10, respectively. The upward electric contacts 8a and 9a advance into the connector part 15 and are connected to female terminals (not shown) in the connector part. The electric contacts 8a and 9a situated at the bottom side are directly connected to a horizontal end (terminal part) 27b of a metal wire rod 27 having a square shape in cross section situated at the power supply-side, an end 20a of a metal wire rod 20 having a square shape in cross section situated at ground-side or a middle portion in the longitudinal direction thereof with solder or by welding. The terminal (8) may be directly connected to a middle portion in the longitudinal direction of the metal wire rod 27 which has a terminal part 27a for a connector.

Paragraph beginning at page 12, line 4 has been amended as follows:

Each metal wire rod 19, 20, 26 – 28 (hereinafter, representatively 7) having a square shape in cross section is bent into a suitable shape and arranged in a line on a surface of the insulating plate 18 of the base 10. The metal wire rod 7 has a small width ~~not like~~ unlike a conventional busbar, thereby enabling ~~to construct~~ construction of many circuits, in order to ~~densify~~ increase the density of the circuit and to ~~compact~~ make the automatic gearing module 1 more compact.

Paragraph beginning at page 12, line 14 has been amended as follows:

If the metal wire rod 7 ~~cross~~ crosses the other metal wire rod 7 on the base 10, the metal wire rod 7 is bent in the upward and downward directions so as to ~~attain noncontact~~ avoid contact. A known metal wire rod having a square shape can be used and is extendingly formed not by pressing but by using a dies. In the automatic gearing module 1, for example, the metal wire rod 7 preferably has a square or nearly square shape in cross section having 0.025 inches (0.64 mm) on a side. Here, the nearly square shape means a shape close to a rectangle shape.

Paragraph beginning at page 13, line 2 has been amended as follows:

In the preferred embodiment as shown in Fig. 1, one end of the metal wire rod 19, 26 – 28 is bent downward perpendicularly so as to be one terminal part 19a, 26a – 28a, respectively. The one terminal part 19a, 26a – 28a penetrates through a hole 34 of the insulating board 18 of the

base 10 and is inserted into a connector fitting space of a connector housing (i.e., housing) 35 situated at lower side. The connector fitting space continues to an opening (not shown) situated at lower side. The two connector housings 35 are formed nearly in a line at right and left at one side of the base 10. The male terminals 19a, 26a – 28a and the female connector housing 35 constitute a female connector. For example, a connector (not shown) of an external wiring harness is fittingly connected into a connector fitting space of each connector from an opening situated at a lower side.

Paragraph beginning at page 14, line 3 has been amended as follows:

The body of each metal wire rod 7 shown in Fig. 1 is bent into a suitable shape in the horizontal direction according to a shape of the base and so on. If there is no interference depending on the shape of the base or the arrangement of the components, the body of the metal wire rod 7 can be formed straight. If the metal wire rod 7 is set to cross the other metal wire rod 7, as described above, the metal wire rod 7 is bent in the perpendicular direction so that the metal wire rod 7 situated at the upper side can pass through horizontally without any contact above the horizontal metal wire rod 7 situated at lower side.

Paragraph beginning at page 15, line 1 has been amended as follows:

If a terminal at the mating side needs to come in contact with one and/or opposite terminal part of the metal wire rod 7 with a wide-width area similarly to a busbar, as shown in

Figs. 3A – 3C, the end 28b of the metal wire rod 28 (representatively denoted by 28) having a square shape in cross section is folded in the thickness direction (i.e., height direction) and the end including the folded part 36 is crushed by pressing in the thickness direction from the above as shown in arrow P, thereby forming a flat terminal part 36b having wide width W. The thickness of the terminal part 36b may be the same as that of the body part of the metal wire rod 28, or thicker or thinner than that.

Paragraph beginning at page 17, line 13 has been amended as follows:

The length of a side of the metal wire rod 50, 52 is not necessarily limited to be 0.025 inches but can be a suitable size according to a capacity of a fuse 47, relay 48 and connector terminal. The width of the metal wire rod is significantly ~~smaller~~ less than that of a conventional busbar. The dimension in cross section of the metal wire rod 50, 52 situated up and down is the same. The metal wire rod 50, 52 may be used together with a busbar.

Paragraph beginning at page 18, line 22 has been amended as follows:

[[Since]] Because the metal wire rod 50, 52 is significantly thinner than a busbar, a space for the arrangement on the insulating board 53, 54 can be limited, thereby making the circuit density high. Moreover, the number of the circuit arranging boards 55, 56, each consisting of a plurality of the metal wire rods 50, 52 and the insulating board 53, 54, can be reduced, thereby making the electric junction box 41 small.